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A response to Rueylin Chen, 'The STS challenge to PS in Taiwan', by Francesca Bray.

Lamenting the absence of fruitful dialogue between philosophers of science and STS scholars in Taiwan, Rueylin Chen argues that each field can and should help the other to improve. In particular, if I have understood Chen's arguments correctly, philosophers of science could learn from STS to pay closer attention to the social aspects of scientific activity, to social understandings of what science is, and to the political or ethical implications of scientific practice in a modern technoscientific society like Taiwan. STS, meanwhile, could benefit both reflexively and methodologically from the philosophy of science, by paying more rigorous analytical attention to its own theoretical lineages, internal contradictions and truth claims, by attending more closely to the validity of the scientific arguments at the core of most STS case-studies, and by developing its capacity as a discipline to proceed from the level of specific case-study to generalisation.

Chen's arguments for what STS has to gain from a dialogue with the philosophy of science are based on the proposition that STS is, fundamentally, a science, albeit a social science. Greater philosophical rigour, reflexive and interpretive, would thus contribute positively to its 'normal development'. Certainly any scholarly field benefits from a rigorous critical attention to its epistemological practices; it would be hard to disagree with Chen on that point. But is STS in fact construed by its practitioners as a 'science', and what might the tradition of Anglo-Saxon analytical philosophy which Chen identifies as the forte of Taiwanese philosophy of science have to contribute to it?

In my opinion one can make a strong case that STS (like SSK before it) is a project rather than a discipline or a science, and freely recognised as such by its practitioners. It is a shared goal, namely the unpacking and challenging of technocratic authority, that gives coherence to the field of STS, rather than any aspirations to a unified theory, or any agreed bounding or framing of the object of analysis. STS is essentially political, a spectrum of exercises in demystification ranging from the gendering of electric shavers to the transnational governance of nuclear power to claims about the separation of the social and the natural. All these exercises address at different levels how power in contemporary society is accrued and materialised through representations (science) and modifications (technology) of the 'natural world'. Typically, STS research looks at complex technoscientific issues where many different interests are at stake, and where a range of competing scientific or technical justifications are available for mobilisation by different stakeholders. Where alternative scientific truth-claims, often equally valid, are mobilised by politically opposed groups (as for instance in the arguments for or against approving genetically-modified corn), it is as likely to be rhetorical skill, or the number of human and non-human allies one has enrolled, or how much it rained in Russia last summer, that decides the outcome as any formal logic. Since STS views scientific research as invariably shaped by interest, it is concerned in part with the logic of its design and the accuracy of its results, but equally, or perhaps even more, with whose agendas (explicitly or implicitly) the research is designed to promote.

Most STS research, furthermore, has an activist dimension, aiming not simply to demystify technocratic truth-claims but to develop platforms for more inclusive,

democratic decision-making or design. In other words, it is both rooted in and focused upon ideology and values. This is one reason why I suggested to Rueylin Chen at the conclusion of the 2009 EASTS conference panel on *Philosophy of Science and STS in East Asia* that philosophers of technology might prove better interlocutors of STS scholars than philosophers of science, or more specifically, than analytical philosophers of science.

It is notable, if one traces trends in the philosophy of technology over the last twenty or thirty years, that a number of leading senior figures in the field began as analytical philosophers focusing on the dynamics of technological thought and practice, but then felt compelled to broaden their approach. As Friedrich Rapp noted in 1995:

I myself have moved from the *Analytical Philosophy of Technology* (1978), which was written with a view to engineering and technological innovations, to a more traditional philosophical interpretation of technology. My colleague Günter Ropohl criticizes this shift as treason against the realist turn. ... In my recent book, *Die Dynamik der modernen Welt* (1994), I argue that today the philosophy of technology must above all deal with two problems. First, it must explain the dynamics of technological change, thus indicating ways in which we might interfere in "technological determinism." Without an understanding of the origins of technological change, we can hardly expect our ethical postulates to have any practical application. Second, the philosophical interpretation of technology must draw on and strive to be integrated into the philosophical tradition. ... These approaches, then, should be supplemented by a metaphysical interpretation, be it in terms of the will to power, the history of being, or technology as the myth (and fate) of our time.¹

This turn represents not a retreat to Heideggerian nostalgia, but the recognition that we inhabit technological cultures in which the resistance to dissociation of complex sociotechnical systems, from the CERN Hadron Collider to a can of tomatoes, inevitably intertwines hard science, politics, symbolism and material functionality. None of these dimensions can be analytically isolated. The interdisciplinary imperative is so strong that the boundary between 'philosopher of technology' or 'philosopher of technology studies' and 'STS practitioner' is often impossible to draw. Of the twenty-three people interviewed as leading philosophers of technology in *Philosophy of Technology: 5 Questions* (Olsen & Selinger 2007), at least half (including Harry Collins, Joan Fujimura, Bruno Latour, Susan Leigh Star and Lucy Suchman) will be equally familiar to us as prominent figures in empirical STS research.

If one examines the list of contributions to the most recent publications on philosophy of technology, whether journals like *Techne* or works like Olsen, Pedersen & Hendricks' *Companion to the Philosophy of Technology*, we see that it is clearly a field in movement, hesitant to claim an exclusive territory (indeed often the practitioners prefer

¹ Rapp 1995. Altogether three of the five philosophers of technology who contributed to this symposium began as analytical philosophers but went on to broaden their perspective to include ethical and ontological considerations.

to speak of ‘philosophy and technology’ rather than ‘philosophy of technology’), eager to explore how local contexts generate distinctive research questions and what this might imply for an interrogation of presuppositions within the field. So what does the philosopher see as specific to biotechnology, computing, agriculture or engineering and what does she see as more generally applicable to ‘technology’? What schools of philosophy of technology, or of technoscience, have arisen in Germany, Scandinavia, the Netherlands, or Spain and the Spanish-speaking world, and why (Durbin 2006; Mitcham & Bengoetxea 2006)? The attention of philosophers of technology to these particularities, institutional and regional, seems to offer particularly fertile ground for dialogue with STS scholars in Taiwan, whether they be philosophers or researchers in any other discipline.

I do not wish for a moment to suggest that the philosophy of science has nothing to offer STS, whether in Taiwan, Japan, the Netherlands or the Philippines. But I should myself instinctively turn to other schools of philosophy of science than the Anglo-Saxon analytical tradition for inspiration, for instance Canguilhem, Foucault, Serres, Prigogine or Atlan in France and Belgium, or Habermas in Germany. Somehow their breadth of vision and their concern with how societies deploy symbolic, social and material resources in the pursuit of power seem more commensurate with the intrinsically emancipatory goals of STS scholarship, and with the complexity of the issues and systems that STS addresses.

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